CinemaStar™ P7K500

3.5-INCH HARD DRIVES FOR VIDEO APPLICATIONS

Digital video and surveillance storage for 24x7 operation

Highlights

> Up to 500GB[1] capacity
> 24x7 availability[2]
> SmoothStream™ technology
> Silent-seek acoustics
> Smart Command Transport (SCT) for optimized video streaming
> Best-in-class power utilization and heat emission
> Patented load/unload ramp for enhanced reliability
> Targeted 1.2 million hours MTBF[3]
> Choice of Parallel ATA or Serial ATA interface

Applications

> HD Digital Video Recorders
> Video surveillance for DVR, Network, JBOD and small footprint recording and storage
> DVD/HDD recorders
> DVR-enabled televisions

500, 320 and 250GB | 7200 RPM
PATA 133 and SATA 3Gb/s

Features and Benefits

	Feature / Function	Benefits
Capacity	Up to 500GB of storage	* Up to 125 hours of high-definition video, 500 hours of standard video, 178 movies, 125,000 4-min songs or 250 video games
Power	Advanced Power Management	Reduces power during idle periods
	HiVERT™ technology	Best-of-breed power consumption
Acoustics	Silent-seek	Ultra quiet operation
Reliability	Thermal Fly-height Control (TFC)	Better soft error rate for improved reliability& performance
	Head load/unload	Protects disk during non-operation
	Internal thermal sensor	Improves data integrity
	Media Maintenance	Prevents track wear-out
Performance	SMART Command Transport (SCT)	Adaptive error correction for optimum video delivery
	Streaming video features set	Improved handling of high-quality video streams
Configuration	Choice of PATA or SATA interface	Design flexibility

*Actual storage may vary depending on the compression rate applied. Capacities represented may not be combined.

Next generation of CinemaStar debuts

Hitachi proudly presents the next in the series of hard drives designed specifically for the role of storage in digital video and surveillance applications. The CinemaStar P7K500 hard drive provides customized features, high capacity and power efficiency making it an ideal solution for surveillance systems and consumer electronics (CE) devices like digital video recorders and set-top boxes.

Customized features support on–demand digital video solutions

An exceptional blend of audio/visual (AV) features fine tunes the CinemaStar P7K500 for digital video storage needs. Optimized to record multiple, simultaneous video streams, Hitachi SmoothStream technology is enabled to support the ATA-7 streaming command set, and SCT provides time-limited error recovery and thermal monitoring capabilities. Because IT data and video streams have different throughput demands, AV-Zoning allows the definition of various error recovery procedures for predefined ranges of data blocks, or zones. This feature enables the system to effectively deliver critical system data and time-sensitive video content from a single drive. Other features that help tailor this drive for streaming video applications include Read Continuous mode, which helps manage error recovery for video streams, and Media Maintenance enhancements, which help prevent track wear-out from around-the-clock operation.

Power efficient for cooler operation and longer life

Leveraging six generations of power management technology, this new breed of video drive delivers best-in-class power management and thermal emissions. HiVERT technology was pioneered on 2.5-inch drives to help maximize battery life, but also works for this 3.5-inch hard drive to help minimize power consumption. These standard features on the CinemaStar P7K500 enable manufacturers to develop video systems that run cooler and require less power which ultimately leads to longer product life.

Specifications

Model(s)	HCP725050GLAT80 HCP725032GLAT80 HCP725025GLAT80	HCP725050GLA380 HCP725032GLA380 HCP725025GLA380
Configuration		
Interface	Parallel ATA 133	Serial ATA 3Gb/s
Capacity (GB)[1]	500 / 320 / 250	←
Data heads (physical)	4 / 3 / 2	←
Data disks	2 / 2 / 1	←
Max. areal density (Gbits/sq. in)	185	←
Performance		
Data buffer (MB)[4]	8	←
Rotational speed (RPM)	7200	←
Media transfer rate (Mbits/sec, max)	1138	←
Interface transfer rate (MB/sec, max)	133	300
Silent seek time (read, typical) (avg. ms)	14	←
Reliability		
Error rate (non-recoverable, bits read)	1 in 10E14	←
Start/stops (at 40° C)	50,000	←
Availability[2] (hrs/day x days/wk)	24x7	←
MTBF[3] (hours)	1,200,000	
Power		
Requirement	+5 VDC (+/-5%) +12 VDC (+/-10%)	←
Startup (max. A)	2.0 (+12V) & 1.1 A (+5V)	2.0 (+12V) & 1.3 A (+5V)
Idle	4.5 (2 disk) 3.3 (1 disk)	4.8 (2 disk) 3.6 (1 disk)
Physical size		
z-height (mm)	26.1	←
Dimensions (width x depth, mm)	101.6 x 147	←
Weight (g, max.)	550	←
Environmental (operating)		
Ambient temperature[5]	0º to 65º C	←
Relative humidity (non-condensing)	8% to 90%	←
Shock (half-sine wave (G 2ms))	70	←
Vibration	0.67 (xy)	←
Environmental (non-operating)		
Ambient temperature	-40º to 65º C	←
Relative humidity (non-condensing)	5% to 95%	←
Shock (half-sine wave (G 2ms))	350	←
Vibration random (G RMS)	1.04 (XYZ)	←
Acoustics (A-weighted sound power)		
Idle (Bels, typ.)	2.6 (2 disk) 2.5 (1 disk)	←
Operating (Bels, typ.)	2.8 (2 disk) 2.7 (1 disk)	

[1] One GB is equal to one billion bytes when referring to hard drive capacity. Accessible capacity may be less.
[2] Intended for low duty cycle AV streaming applications. This MTBF target is based on a sample population and is estimated by statistical measurements and acceleration algorithms under normal operating conditions. MRBF ratings to not predict reliability of an individual drive.
[3] Portion of buffer capacity used for drive firmware
[4] Low duty cycle, non mission-critical applications requiring up to 20 percent read/write activity per power-on-hour in digital video and surveillance applications. Customer environments may vary from application to application.
[5] Temperature tested at top cover surface

Robust and proven technology

All CinemaStar products are enhanced with silent-seek acoustics to deliver bedroom-quiet operation, and Hitachi patented load/unload ramp mechanism that helps prevent disk wear and protects the disk during non-operation. The CinemaStar P7K500 is also built using industry's most reliable perpendicular magnetic recording (PMR) techniques to maximize capacity, performance and field reliability.

Hitachi quality and service

All Hitachi hard drives are designed to the highest quality standards with field-proven components. They are backed by Hitachi's worldwide technical support and integration services, enabling customers around the globe to bring their products to market quickly.

How to read the CinemaStar model number

HCP725050GLAT80 = 500GB/8 MB buffer

H = Hitachi
C = CinemaStar
P = Series prefix
72 = 7200 RPM
50 = Full capacity — 500GB
50 = Capacity this model, 50 = 500GB
    (40 = 400GB, 32 = 320GB, 25 = 250GB)
G = Generation code
L = 26.1mm z-height
AT = PATA 133 (A3 = SATA 3Gb/s)
8 = 8 MB buffer
0 = Reserved

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